WHAT IS CLAIMED IS:

1. A method of processing a sheet-like substrate, the method comprising:

a) providing a coater adapted for applying coating onto the substrate, the coater comprising a substrate support defining a path of substrate travel extending through the coater, a downward coating apparatus positioned above the path of substrate travel, and an ion gun positioned beneath the path of substrate travel, wherein the ion gun is at a location further along the path of substrate travel than the downward coating apparatus;

b) conveying the substrate along the path of substrate travel;

c) operating the downward coating apparatus to coat a top major surface of the substrate; and

d) operating the ion gun to emit an ion beam toward a bottom major surface of the substrate, said operation of the ion gun being performed to remove from the bottom major surface of the substrate any oversprayed coating that was inadvertently deposited upon marginal portions of the bottom major surface of the substrate during said operation of the downward coating apparatus.

2. The method of claim 1 wherein the substrate is maintained in a horizontal orientation during said conveyance of the substrate along the path of substrate travel.

3. The method of claim 1 wherein the substrate is a sheet of glass that is on the substrate support during said conveyance, and wherein other sheets of glass are also on the substrate support, such sheets of glass being spaced-apart from one another on the substrate support and conveyed in such a spaced-apart configuration.

4. The method of claim 1 wherein the substrate support comprises a plurality of spaced-apart transport rollers, the method comprising rotating at least one of the transport rollers to achieve said conveyance of the substrate along the path of substrate travel.

5. The method of claim 4 wherein said operation of the ion gun emits said ion beam upwardly between an adjacent pair of the spaced-apart transport rollers.

6. The method of claim 1 wherein the downward coating apparatus is a downward sputtering apparatus comprising an upper sputtering target positioned above the path of substrate travel, and wherein said operation of the downward coating apparatus comprises establishing a plasma adjacent said upper sputtering target.

7. The method of claim 1 wherein the downward coating apparatus is a chemical vapor deposition apparatus, and wherein said operation of the downward coating apparatus comprises delivering precursor gas to an upper region of the coater.

8. The method of claim 1 wherein the downward coating apparatus comprises an upper ion gun, the upper ion gun being adapted for ion beam coating deposition, and wherein said operation of the downward coating apparatus comprises operating the upper ion gun to emit an ion beam toward the top major surface of the substrate.

9. The method of claim 1 further comprising an upward coating apparatus, the upward coating apparatus being positioned beneath the path of substrate travel at a location further along the path of substrate travel than the ion gun, the method comprising operating the upward coating apparatus to coat the bottom major surface of the substrate after said operation of said ion gun has removed any oversprayed coating from the bottom major surface of the substrate.

10. The method of claim 9 wherein said operation of the upward coating apparatus is performed after all other coating of the substrate in the coater has been performed.

11. The method of claim 9 wherein the substrate is not conveyed beneath any operating downward coating apparatus in the coater after said operation of the upward coating apparatus, such that marginal portions of coating applied to the bottom major surface of the substrate will not be concealed by oversprayed coating from any subsequent downward coating apparatus in the coater.

12. The method of claim 9 wherein said operation of the upward coating apparatus is performed in a final chamber of the coater.

13. The method of claim 9 wherein the bottom major surface of the substrate is coated with a coating having a total optical thickness of less than about 690Å.

14. The method of claim 13 wherein the top major surface of the substrate is coated with a coating having a total optical thickness of at least about 1,000Å.

15. The method of claim 9 wherein said operation of the upward coating apparatus comprises depositing on the bottom major surface of the substrate a surface-effect coating selected from the group consisting of a photocatalytic coating, a hydrophilic coating, and a hydrophobic coating.

16. The method of claim 15 wherein the surface-effect coating comprises titanium oxide and/or silicon oxide.

17. The method of claim 16 wherein the surface-effect coating is a photocatalytic coating comprising titanium oxide.

18. The method of claim 9 wherein the upward coating apparatus is an upward sputtering apparatus comprising a lower sputtering target positioned beneath the path of substrate travel, and wherein said operation of the upward coating apparatus comprises establishing a plasma adjacent said lower sputtering target.

19. The method of claim 9 wherein the upward coating apparatus is an evaporation coating apparatus, and wherein said operation of the upward coating apparatus comprises positioning a source of coating material to be evaporated in a lower region of the coater.

20. The method of claim 9 wherein the upward coating apparatus is a chemical vapor deposition apparatus, and wherein said operation of the upward coating apparatus comprises delivering precursor gas to a lower region of the coater.

21. The method of claim 9 wherein the upward coating apparatus comprises a further ion gun, said further ion gun being adapted for ion beam coating deposition, and wherein said operation of the upward coating apparatus comprises operating said further ion gun to emit an ion beam toward the bottom major surface of the substrate.

22. A coater adapted for applying coating onto a sheet-like substrate, the coater comprising a substrate support defining a path of substrate travel extending through the coater, a downward coating apparatus positioned above the path of substrate travel and adapted for coating a top major surface of the substrate, and an ion gun positioned beneath the path of substrate travel and adapted for cleaning a bottom major surface of the substrate, wherein the ion gun is at a location further along the path of substrate travel than the downward coating apparatus such that the ion gun is adapted to remove from the bottom major surface of the substrate oversprayed coating inadvertently deposited upon marginal portions of the bottom major surface of the substrate during operation of the downward coating apparatus.

23. The coater of claim 22 wherein the substrate support is configured for maintaining the substrate in a horizontal orientation during conveyance of the substrate through the coater.

24. The coater of claim 22 wherein the substrate is a sheet of glass positioned on the substrate support, and wherein other sheets of glass are also positioned on the substrate support, such sheets of glass being spaced-apart from one another on the substrate support.

25. The coater of claim 22 wherein the substrate support comprises a plurality of spaced-apart transport rollers.

26. The coater of claim 25 wherein the ion gun is adapted to emit an ion beam upwardly between an adjacent pair of the spaced-apart transport rollers.

27. The coater of claim 26 wherein said adjacent pair of rollers are spaced further apart than other adjacent rollers in the coater.

28. The coater of claim 22 wherein the downward coating apparatus is a downward sputtering apparatus comprising an upper sputtering target positioned above the path of substrate travel.

29. The coater of claim 22 wherein the downward coating apparatus is a chemical vapor deposition apparatus comprising at least one gas-delivery outlet for delivering precursor gas to an upper region of the coater.

30. The coater of claim 22 wherein the downward coating apparatus comprises an upper ion gun, the upper ion gun being adapted for ion beam coating deposition and positioned above the path of substrate travel.

31. The coater of claim 22 further comprising an upward coating apparatus, the upward coating apparatus being positioned beneath the path of substrate travel and adapted for coating the bottom major surface of the substrate, wherein the upward coating apparatus is at a location further along the path of substrate travel than the ion gun, such that the upward coating apparatus is adapted for coating the bottom major surface of the substrate after the ion gun has been operated to clean oversprayed coating from the bottom major surface of the substrate.

32. The coater of claim 31 wherein the coater does not have any downward coating apparatus further along the path of substrate travel than the upward coating apparatus, such that marginal portions of coating applied to the bottom major surface of the substrate will not be concealed by oversprayed coating from any subsequent downward coating apparatus in the coater.

33. The coater of claim 31 wherein the upward coating apparatus is disposed in a final chamber of the coater.

34. The coater of claim 31 wherein the upward coating apparatus is configured for deposition of a surface-effect coating selected from the group consisting of a photocatalytic coating, a hydrophilic coating, and a hydrophobic coating, the upward coating apparatus including a source of coating material comprising titanium and/or silicon.

35. The coater of claim 31 wherein the upward coating apparatus is an upward sputtering apparatus comprising a lower sputtering target positioned beneath the path of substrate travel.

36. The coater of claim 31 wherein the upward coating apparatus is an evaporation coating apparatus comprising a source of coating material to be evaporated in a lower region of the coater.

37. The coater of claim 31 wherein the upward coating apparatus is a chemical vapor deposition apparatus comprising at least one gas-delivery outlet for delivering precursor gas to a lower region of the coater.

38. The coater of claim 31 wherein the upward coating apparatus comprises a further ion gun, the further ion gun being adapted for ion beam coating deposition.

39. A method of processing a sheet-like substrate, the method comprising:

a) providing a coater adapted for applying coating onto the substrate, the coater comprising a substrate support defining a path of substrate travel extending through the coater, wherein an ion gun is positioned beneath the path of substrate travel, and wherein an upward coating apparatus is positioned beneath the path of substrate travel at a location further along the path of substrate travel than the ion gun;

b) conveying the substrate along the path of substrate travel;

c) operating the ion gun to emit an ion beam toward a bottom major surface of the substrate, the ion beam comprising accelerated ions that strike the bottom major surface of the substrate; and

d) operating the upward coating apparatus to deposit a photocatalytic coating on the bottom major surface of the substrate.

40. The method of claim 39 wherein the upward coating apparatus is an upward sputtering apparatus comprising a lower sputtering target positioned beneath the path of substrate travel, the lower target being sputtered to deposit the photocatalytic coating on the bottom major surface of the substrate.

41. The method of claim 40 wherein the lower target comprises a titanium-containing target material, the lower target being sputtered in an oxidizing atmosphere.

42. The method of claim 39 wherein the photocatalytic coating is deposited so as to have a total optical thickness of less than about 690Å.

43. The method of claim 39 wherein said operation of the upward coating apparatus to apply the photocatalytic coating is performed after all other coating of the substrate in the coater has been performed.

44. The method of claim 39 wherein the substrate is not conveyed beneath any operating downward coating apparatus in the coater after said operation of the upward coating apparatus, such that marginal portions of coating applied to the bottom major surface of the substrate will not be concealed by oversprayed coating from any subsequent downward coating apparatus in the coater.

45. The method of claim 39 wherein said operation of the upward coating apparatus is performed in a final chamber of the coater.

46. The method of claim 39 wherein the ion gun is at a location further along the path of substrate travel than a downward coating apparatus, the method comprising operating the downward coating apparatus to coat a top major surface of the substrate, said operation of the ion gun being performed to remove from the bottom major surface of the substrate oversprayed coating inadvertently deposited upon marginal portions of the bottom major surface of the substrate during said operation of the downward coating apparatus.

47. A coater adapted for applying coating onto a sheet-like substrate, the coater comprising a substrate support defining a path of substrate travel extending through the coater, wherein an ion gun is positioned beneath the path of substrate travel, and wherein an upward coating apparatus is positioned beneath the path of substrate travel at a location further along the path of substrate travel than the ion gun, the upward coating apparatus comprising a lower sputtering target comprising a titanium-containing target material.